US CLAIMS - 30001070

1. A method of protecting data during writing of the data to a data storage tape, the method including the steps of:-

writing a data set to the tape and creating a code representative of the content of the data set being written to the tape, and

associating said code with said data set.

2. A method according to claim 1 and including the step of storing the code.

3. A method according to claim 2 wherein the code is stored by being written as an entry to a memory.

4. A method according to claim 1 wherein the code is associated with the data set by allocating an identification symbol to said code.

5. A method according to claim 3 wherein the code is stored by being written as an entry to a memory and wherein said identification symbol is also written to the memory.

6. A method according to claim 3 wherein the memory is incorporated within a memory device.

7. A method according to claim 3 wherein the memory is a dedicated area of tape set aside for this purpose.

8. A method according to claim 1, wherein at least said data writing and code-with-data associating steps are repeated to produce on the tape a number of data sets, each having a unique code associated with that particular data set.

9. A method according to claim 8 wherein each access to the tape is treated as a new data set.

10. A method according to claim 4 wherein the identification symbol is the number corresponding to the position of a particular code entry within a sequence of such code entries.

11. A method according to claim 1 wherein the method includes the further steps of:

reading back a data set from the tape and creating a further code representative of the content of the data set read back from the tape,

comparing the two codes and confirming the data set as valid only if the two codes agree.

12. A method according to claim 8 wherein at least the codes created during writing of the data sets to the tape are written as entries to a table in the memory, in which each entry is identified by its position within the table.

13. A method according to claim 1 wherein said code is a signature.

14. A method according to claim 1 wherein said code is a checksum or a CRC (cyclic redundancy check).

15. A method according to claim 6 wherein the memory device is a cartridge memory.

16. A method according to claim 4 wherein said identification symbol is numeric.

17. A method according to claim 16 wherein said identification symbol is an integer.

18. A method according to claim 8 wherein each time a data set is written to the tape and a corresponding associated code is written to the memory, the next code representative of the next data set is entered as the next entry to the memory.

19. A method according to claim 8 wherein there is included the step of keeping count of the total number of codes written to the memory.

20. A method according to claim 19 wherein there is included the step of checking whether or not a predetermined number of entries has been exceeded, and if it has, reporting the tape as read only.

21. A method according to claim 20 wherein said predetermined number of entries is 16.

22. A method according to claim 1 wherein there is included the steps of:-

comparing the associated code with information held on a secure database, and

confirming the tape and/or the data contained thereon as valid only if the code and its association with a particular data set agree with the information held on the secure database.

23. A method according to claim 22 wherein said information held on the secure database includes a secure copy of the code.

24. A method of protecting data during writing of the data to and reading of the data from a data storage tape, the method including the steps of:-

writing a data set to the tape and creating a first code representative of the content of the data set being written to the tape,

associating said first code with said data set,

reading back a data set from the tape and creating a second code representative of the content of the data read back from the tape, and

comparing the first and second codes and confirming the data set as valid only if the two codes agree.

25. A method according to claim 22 wherein the comparing and/or confirming steps are carried out by a controlling software application.

26. A method according to claim 11 wherein the comparing and/or confirming steps are carried out by a controlling software application.

27. A method according to claim 22, wherein the comparing and/or confirming steps are carried out by means of an external reader which is able to access and/or display information recorded in the memory.

28. A method according to claim 11, wherein the comparing and/or confirming steps are carried out by means of an external reader which is able to access and/or display information recorded in the memory.

29. A method according to claim 24 wherein the comparing and/or confirming steps are carried out by a controlling software application.

30. A method according to claim 24 wherein the comparing and/or confirming steps are carried out by means of an external reader which is able to access and/or display information recorded in the memory.

31. A method of protecting data during writing of the data to a data storage tape, the method including the steps of:

writing a data set to the tape and creating a code representative of the content of the data set being written to the tape,

associating the code with the data set,

comparing the associated code with information held on a secure database, and

confirming the tape and/or the data contained thereon as
5 valid only if the code and its association with a particular data set agree with the information held on the secure database.

32. A method according to claim 11 and including the step
10 of storing the code.

33. A method according to claim 24 and including the step of storing the code.

15 34. A method according to claim 32 wherein the code is stored by being written as an entry to a memory device.

35. A method according to claim 33 wherein the code is stored by being written as an entry to a memory device.

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36. A method according to claim 31, wherein the information held on the secure database includes a secure copy of the code.

25 37. A method according to claim 1, wherein the or each code creating step is carried out by apparatus used to write to and/or read from the tape.

38. A method according to claim 1 wherein the or each code
30 creating step is carried out by a controlling software application.

39. A data storage tape having recorded thereon at least one data set, wherein said data set has associated therewith a code representative of the content of said data set.

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40. A tape according to claim 39 wherein said code is stored as an entry to a memory.

41. A data storage tape arranged such that a data set recorded thereon may be associated with a code representative of the content of said data set.

42. A tape according to claim 41 wherein said code is stored as an entry to a memory.

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43. A tape according to claim 39 wherein the code is associated with a particular data set by means of an identification symbol.

20 44. A tape according to claim 40 wherein the memory is incorporated within a memory device.

45. A tape according to claim 44, wherein the memory device has stored therein a number of codes, each representative of a particular one of a number of data sets on the storage medium and identifiable as associated with that particular data set.

46. A tape according to claim 45 wherein the codes are written as entries to a table in the memory device, in which each entry is identifiable by means of its position within the table.

47. A tape according to claim 39 wherein the code is a signature.

48. A tape according to claim 39 wherein the code is a checksum or a CRC (cyclic redundancy check).

49. A tape according to claim 44 wherein the memory device is a cartridge memory.

50. A tape according to claim 43 wherein the identification symbol is numeric.

51. A tape according to claim 50 wherein the identification symbol is an integer.

52. A tape according to claim 44 wherein the memory device includes a counter which indicates the number of codes entered.

53. A tape according to claim 41 wherein the code is associated with a particular data set by means of an identification symbol.

54. A tape according to claim 42 wherein the memory is incorporated within a memory device.

55. A tape according to claim 54 wherein the memory device has stored therein a number of codes, each representative of a particular one of a number of data sets on the storage medium and identifiable as associated with that particular data set.

56. A tape according to claim 55 wherein the codes are written as entries to a table in the memory device, in which each entry is identifiable by means of its position within the table.

57. A tape according to claim 41 wherein the code is a signature.

58. A tape according to claim 41 wherein the code is a checksum or a CRC (cyclic redundancy check).

59. A tape according to claim 54 wherein the memory device is a cartridge memory.

60. A tape according to claim 53 wherein the identification symbol is numeric.

61. A tape according to claim 60 wherein the identification symbol is an integer.

62. A tape according to claim 54 wherein the memory device includes a counter which indicates the number of codes entered.